



PATENT  
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Applicant:	Orlandi	Confirmation No.:	8600
Serial No.:	10/537,842	Art Unit:	1794
Filed:	June 6, 2005	Examiner:	Johnson, J. L.
Title:	"Fabric with a base of non-woven fabric strips"		

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
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DECLARATION UNDER 37 C.F.R. § 1.132

I, Giancarlo Crema, being duly sworn depose and say that:

1. I am an Italian citizen residing at: Gallarate (Varese)
2. I am familiar with the English language

I further declare that I currently am the Plant Manager of Orlandi SpA (IT), that is the Assignee of the pending US application n. 10/537,842,

I am responsible of the R&D sector and engineering sector

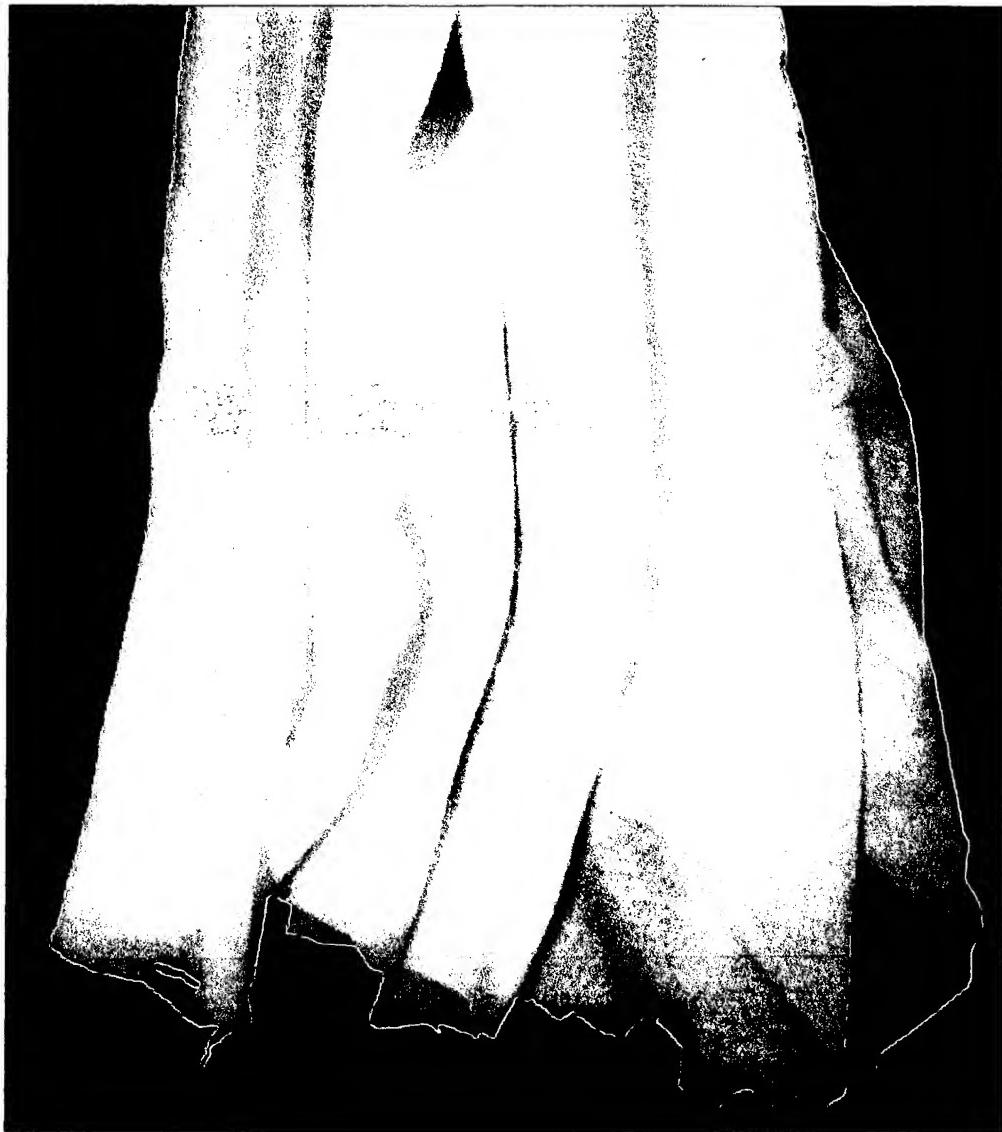
I have been working in the nonwoven field since 36 years

The following tests had been carried out under my own responsibility.

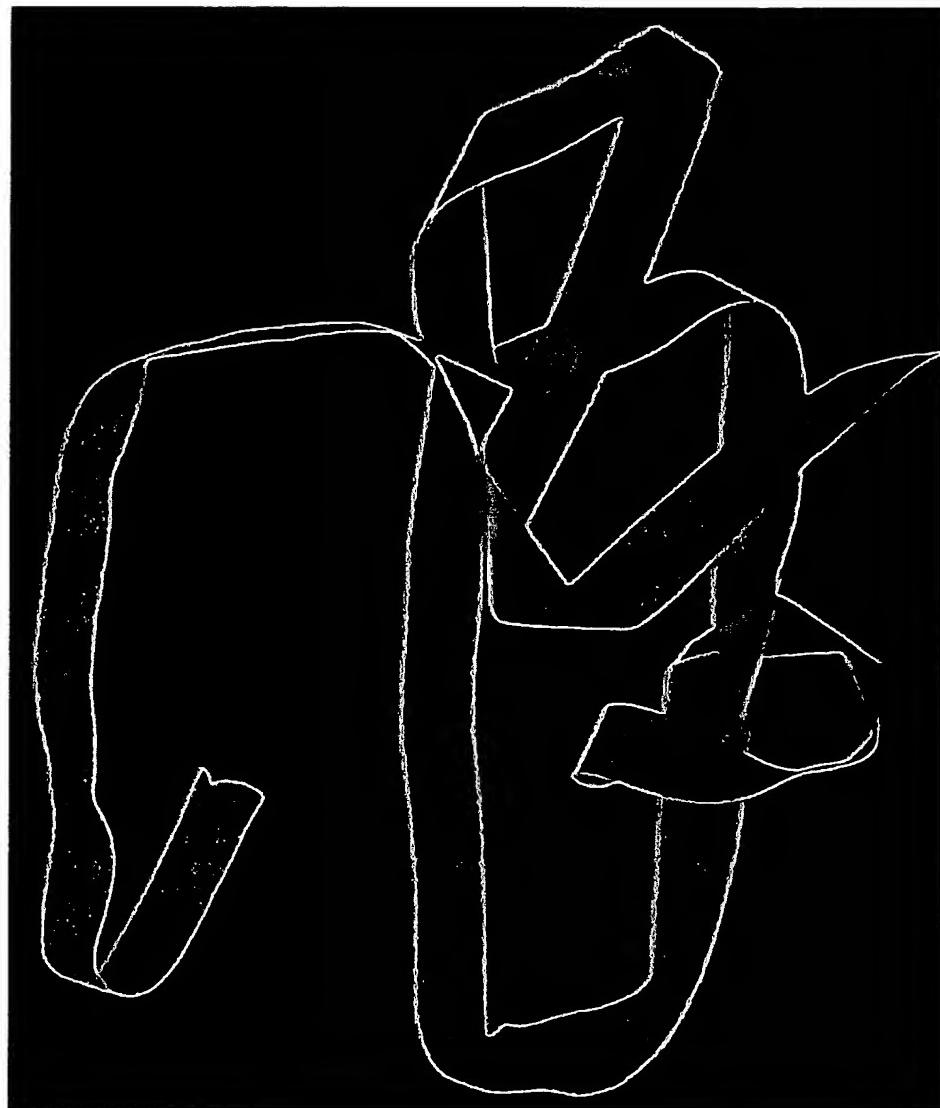
### **1. Preparation of the textile product according to Claim 1**

The steps of the process for producing the textile product according to currently pending Claim 1, are hereinafter illustrated in order to clarify the final structure of the product itself and the unexpected properties achieved thereof.

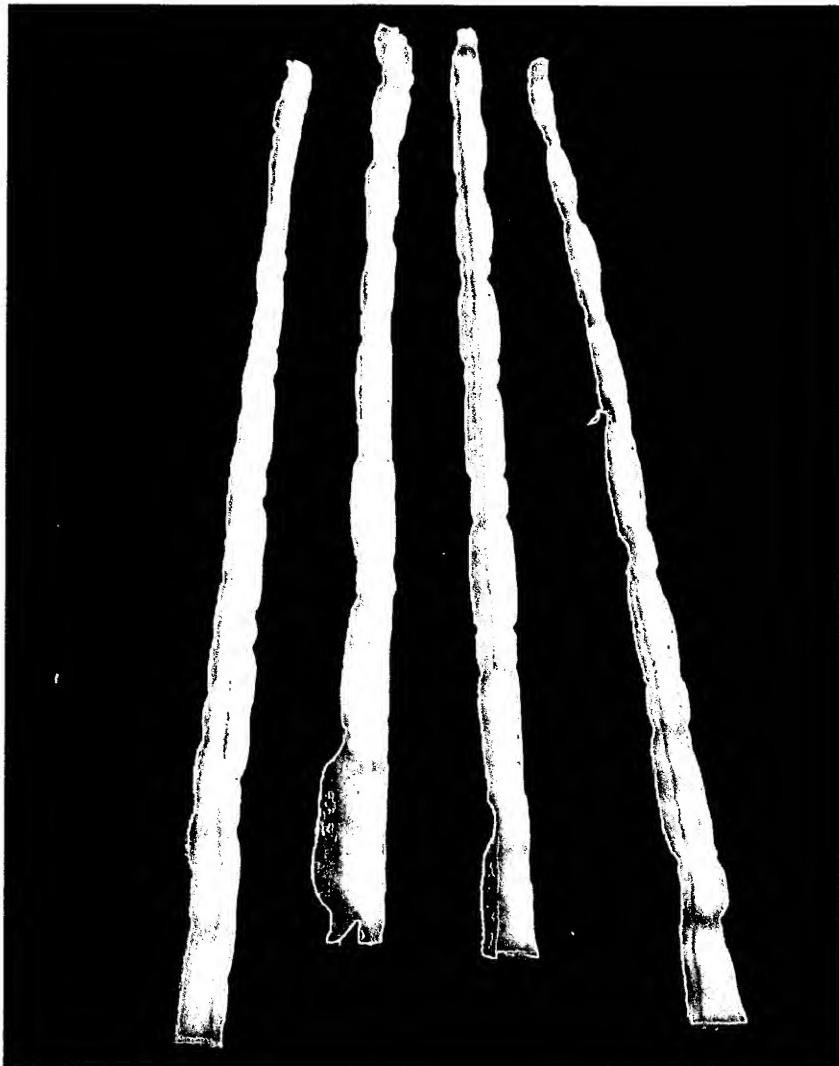
Initially, the non-woven fabric of hydroentangled, thermo-bonded or spun-bonded fibers is provided, as shown below, having a weight/surface ratio of 10 to 200 g/m<sup>2</sup>.



Then, the non-woven fabric is cut into strips having a width between 1 and 10 cm, preferably between 4 and 7 cm, as represented below.

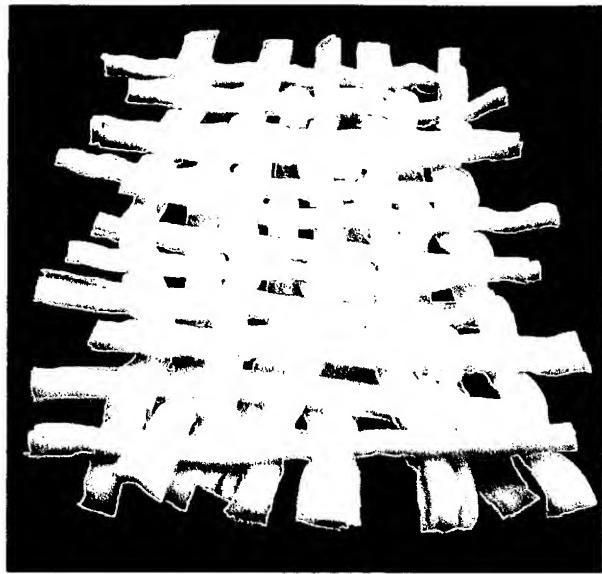


Subsequently, said strips are twisted, as below illustrated, and grouped to give starting weft and wrap that are then used in weaving the final product.

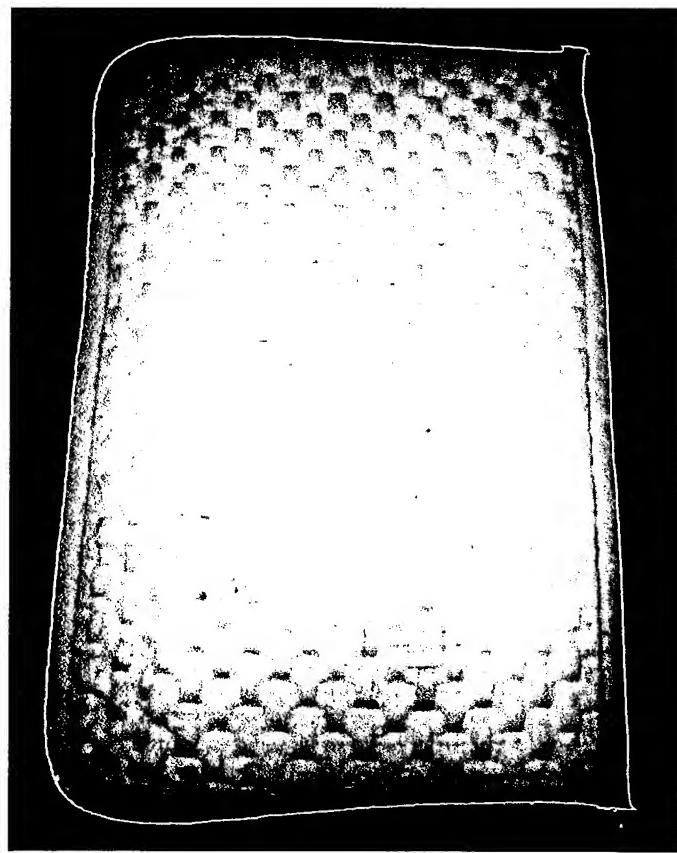


The weaving of weft and warp to give the textile product is shown below in a configuration where the resulting web is left non-tight for illustrative purposes. This is to make evident that in the structure obtained advantageously there are void interstices.

Furthermore, the resulting surface is conveniently gathered and irregular, due to the twisting of strips, whereas having the textile product a final thickness not less than 4,5 mm.



In the subsequent image, the final textile product is represented, wherein the weaving is suitably tight and a perimetric rim is sewn.



## **Experimental section**

### **1. Preparation of textile product samples**

The samples have been prepared starting from non-woven strips of viscose and polypropylene having an average width of 4,5 cm and a weight/surface ratio of 50 g/m<sup>2</sup>.

Following the above illustrated steps, 5 textile product samples have been prepared according to the pending invention.

The resulting 5 textile products had dimensions of 40 cm × 50 cm, a final average weight/surface ratio of 600 g/m<sup>2</sup>, and an average thickness of about 4,5 mm.

### **2. Water Absorption**

A test for measuring the water absorption capacity of the 5 textile product samples of the invention has been carried out. ( Edana 10.4-02, n° 2, liquid absorbancy capacity)

For all the above samples, the water absorption shown was higher than 700%. This means that the textile products according to the invention are capable to retain water in an amount higher than 7 times their weights. As a matter of fact, each sample absorbed more than 4.20 kg of water.

### **3. Results**

According to ASTM D-570, the water absorption values for the materials involved in the present invention are as follows:

MATERIAL	UNITS	WATER ABSORPTION VALUE
viscose	%	13
polypropylene	%	0.03
polyamide	%	0.30

This means that the fibers themselves do not show at all good water absorption properties. Therefore, the same fibers can not be deemed to be suitable for making textile products to be used as cleaning cloths, since there were no expectations of success.

Notwithstanding this evident technical prejudice, the Inventor found textile products according to the invention that show very good water absorption properties owing to the claimed selected combination of strips features (non-woven nature, width, and weight/surface ratio) that allow to give rise to a structure having suitable interstices where an unexpectedly large amount of water can be retained. Analogously, when said textile products are used as cleaning cloths, the same interstices can advantageously collect and retain also great amount of dirt and dust from the surfaces to be cleaned.

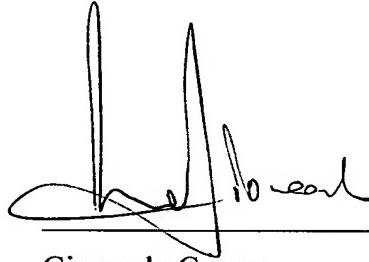
Furthermore, the gathered and irregular surface resulting from the weaving of twisted strips is particularly suitable in term of roughness and resistance to rubbing that are useful in view of the use as cleaning cloths for removing resistant stains and the like from the surfaces absolutely without damaging the latter.

In view of the above, it can be easily understood that the contribution given by the fiber material to resulted water absorption value is actually negligible. In fact, having regard to the value of 700%, averagely not more than 10% can be ascribable to the fiber material, while the remaining 690% of water absorption is achieved by the structure of the final textile product.

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patents issued thereon.

Date: 26/02/2009



Giancarlo Crema